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studying  
for the test  
midterm  
and  
final exam

### 9.1 Naming Ions

- When the metals in Groups 1A, 2A, and 3A lose electrons, they form cations with positive charges equal to their group number.
- The charge of any ion of a Group A nonmetal is determined by subtracting 8 from the group number.
- The charges of cations of many transition metal ions must be determined from the number of electrons lost. When a cation can have more than one ionic charge, a Roman numeral is used in the name to indicate the charge.
- The names of most polyatomic anions end in *-ite* or *-ate*.

### 9.2 Naming and Writing Formulas for Ionic Compounds

- The name of a binary ionic compound is the cation name followed by the anion name.
- To write the formula for a binary ionic compound, write the symbol for the cation and then the anion. Then balance the charges.
- To write formulas for compounds containing polyatomic ions, write the symbol for the metal ion followed by the formula for the polyatomic ion and balance the charges.
- To name a compound containing a polyatomic ion, state the cation first and then the anion.

### 9.3 Naming and Writing Formulas for Molecular Compounds

- Prefixes show how many atoms of each element are present in a molecule of a binary compound.
- To write the formula for a binary molecular compound, write the symbols for the elements and use the prefixes to determine the subscripts. Omit *mono-* for a single atom.

### 9.4 Naming and Writing Formulas for Acids and Bases

- An acid is a combination of a monatomic or polyatomic anion with sufficient hydrogen atoms to make the compound electrically neutral. Acids are named as shown in Table 9.5.
- A base is a combination of a cation with as many hydroxide ions as are needed to make the compound electrically neutral. Bases are named in the same way as other ionic compounds.

### 9.5 The Laws Governing Formulas and Names

- The ways that compounds form are summed up in two laws: the law of definite proportions and the law of multiple proportions.



### Vocabulary

- |                            |                           |  |
|----------------------------|---------------------------|--|
| • acid (p. 271)            | • monatomic ion (p. 253)  | • law of definite proportions (p. 274) |
| • base (p. 273)            | • polyatomic ion (p. 257) | • law of multiple proportions (p. 275) |
| • binary compound (p. 261) |                           |  |

Lavoisier (p. 260) Ionic (p. 268) Molecular (p. 268)  
Regular polyatomic, Irregular polyatomic, diatomics (lucky 7)  
polyatomic molecules (only 3), monoatomic molecules,

Properties of: Molecular compounds, Ionic Compounds, Acids, Bases

States: Acids(aq), Bases(s, g), Ionic(s), Molecular(study formulas), oxides of sulfur, nitrogen, carbon are usually gases

Equations:

*Changing a word equation to a formula equation to a formula equation and changing a formula equation to a word equation*

Covers 9.1, 9.2, 9.3, 9.4 Format: Multiple Choice/Fill in the blank/matching/short answer



and 9.5